

**National Tsunami Hazard Mitigation Program
FY03 Upgrade to WC/ATWC Crest Sites
Request for \$163,511**

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I. Background

1. NOAA's NWS West Coast/Alaska Tsunami Warning Center (WC/ATWC) in Palmer, Alaska carries out NOAA's responsibility to warn coastal populations in the U.S. West Coast, Canada, and Alaska (the AOR) of impending, destructive tsunamis. To accomplish this mission, the WC/ATWC monitors seismic and tide data from many locations throughout the AOR and the Pacific basin.
2. The NTHMP Crest program funded 3 WC/ATWC seismic sites between 1998 and 2000. The sites are Sitka, Sand Point, and Shemya, Alaska. Data from Sitka and Shemya are telemetered directly to Palmer via dedicated phone circuits while data from Sand Point are transmitted via VSAT to Menlo Park, California, and then are forwarded to Palmer.
3. Circuit costs for data transmission from Sitka and Shemya are approximately \$12K/year total.
4. WC/ATWC has access to data from many seismic data centers, some of which are funded through Crest. This access creates a large virtual network for WC/ATWC. To ensure its ability to perform its mission, though, the WC/ATWC requires a back-bone of seismic sites directly transmitted to Palmer, which is consistent with NOAA/NWS policy regarding mission-critical communications. Additionally, the present network consists of costly and outdated analog circuits which preclude an upgrade to modern seismic instrumentation.
5. WC/ATWC and the Pacific Tsunami Warning Center (PTWC) provide each other a mutual backup service. In event of a communications failure at either center, the other center does not receive the failed center's back-bone seismic network under the present telemetry configuration.

II. Proposal

1. This proposal seeks funding to upgrade telemetry at the WC/ATWC Crest-funded sites, Sitka and Shemya, Alaska, to a satellite-based system. The proposed system is the same system presently used at Sand Point, Alaska, and will permit WC/ATWC to directly record data from Sand Point instead of routing the data through Menlo Park. The system also could provide a direct connection to Crest stations operated by the USGS-Menlo Park which use the same VSAT technology.
2. The NWS-WC/ATWC will provide labor and installation costs for the remote sites and will fund the recurring space segment cost. This proposal requests funds to cover the hardware for the central site at Palmer and the remote sites at Sitka and Shemya as well as some of the installation costs of the central site.
3. Recurring Crest-funded circuit costs of approximately \$12K/yr will be eliminated.
4. In addition to improved communications with the existing Crest sites, the central site installation at Palmer will permit WC/ATWC to upgrade its out-of-date analog network to a state-of-the-art, satellite-based system with future remote site hardware funded through the NWS.
5. The proposed VSAT system will provide the capability for PTWC to acquire WC/ATWC data directly in the event of a communications failure at WC/ATWC.

III. FY 03 Proposed Budget: \$163,511

1. Central Site Equipment (Palmer)	\$82815
a. 3.8m Ku-band antenna	
b. Installation hardware and cables	
c. Nanometrics Carina transceiver with GPS antenna	
d. Nanometrics NAQS server license	
2. Remote Site Equipment (2 – Sitka and Shemya)	\$51230
a. 1.8m VSAT antenna	
b. Installation hardware and cables	
c. Nanometrics Trident digitizer	
d. Nanometrics Cygnus transceiver	
3. Test Equipment	\$14150
4. Central Site Installation - Nanometrics	\$10450
5. Freight charges	\$4866
 Project total	 \$163511